Amendment to the Specification:

On page 3, please amend the paragraph staring on line 33 and continuing to page 4, line 10 as follows:

Hence, at the difference with the cited prior arts, it is an object of the present invention to propose an imaging system having means to improve the visualization and localization of the guide wire with respect to the artery walls, in real time, based on the detection of the tip of the guide-wire and the registration of the images. This improved means may be used for instance during the first interventional step of guide wire introduction, when the guide wire is passed through the stenosed part of the artery for the first time. This first interventional step of guide wire introduction is very important, because if the interventional step that ~~consists in~~ includes introducing this guide-wire for the first time fails, then the following steps of stent positioning and deployment are no possible. The alternative to the angioplasty is a heavy intervention for bridging the stenosed part of the artery. This heavy intervention comprises opening the rib cage of the patient, which leaves much more ~~sequels~~ after effects than the angioplasty intervention.

On page 4, please delete the second full paragraph which spans lines 21-24 in its entirety as follows:

~~Such a system is claimed in Claim 1 and in dependent Claims. An image processing method to be used in the system, a program product to implement the steps of this method and an examination apparatus for helping visualization of interventions having such a system are further claimed.~~

On page 6, please amend the paragraph starting on line 21 and continuing to page 7, line 2 as follows:

Hence, ~~according to the invention,~~ it has been chosen to use the radio-opaque property of the guide-wire tip in order to localize this feature in a Region Of

Interest ROI of the images. The system of the invention has means to detect the guide wire tip, to determine the position of all the points of the skeleton of the guide-wire tip, defined for example by co- ordinates x, y, as illustrated by FIG. 6B, in order to determine a field of motion vectors that is used to register the images with respect to a reference image. The system has further means to enhance and zoom the threadlike structures formed by the guide-wire and the artery walls in the images. In the resulting sequence of images, the contrast of the guide-wire and artery walls is improved, the motion is corrected, zooming may be used to enlarge these structures and the following of the intervention can be substantially continuous. Enhancing the features is of importance for the doctor, since at the beginning it is hardly possible to distinguish anything in the acquired images so that pushing the guide-wire forwards without visibility can disrupt the artery and [[arm]] harm the patient. Registering the images in real time is also particularly important for zooming. The images can be further improved by superimposition of static peri-interventional views and live views. The system of the invention has means to perform all these operations.

On page 7, please amend the paragraph beginning on line 31 and continuing to page 8, line 5 as follows:

As illustrated by FIG. 5A, 5B, using the information data of the first extended skeleton position S'o stored in MEM, skeleton vector field estimation means 13 compares the extended skeleton position S'o at a first instant t=0, in the referential of a first image called reference image, and in the ROI, with the extended skeleton positions S't at succeeding instants t. This permits [[of]] estimating, as illustrated by FIG. 1C, a field of motion vectors V, which makes the extended skeleton positions S't correspond to the extended skeleton position S'o. Then a vector field extension is performed by the vector field estimation means 13, for instance using a known technique of warping. Using this technique, a geometric transform is created. Then, said geometric transform is applied for performing a registration operation in the ROI.

On page 8, please amend the paragraph beginning line 22 and continuing to page 9, line 10 as follows:

Now, the doctor has means to visualize the artery walls that are no more moving from one image to a succeeding image, that are no more invisible but instead that are enhanced. Referring to FIG. 4, the doctor has the means 58 to start the processing operation called Stenosis Boosting 10,20. When started, the images pass from I (t) to Stenosis Boosting 10, 20. The data that are estimated for registering the ROI in the images, such as S'o, are memorized in MEM, and used for each image registration. From the means 10, the position x, y of all the pixels of the skeleton of the guide-wire tip are estimated. Thus, the doctor can push slowly the guide forward in the stenosed part of the artery, which is registered and enhanced on a blurred background. The start means 58 can start an automatic device 33 for delivering a small amount of contrast agent to be introduced in the artery at appropriate instant with respect to the instants when the doctor [[push]] pushes the guide forward while observing the processed images R(t). The contrast agent is introduced by appropriate means (catheter). In particular, a great advantage of the invention is that it is no more necessary to inject concentrated contrast agent in the artery of the patient. Since the artery walls are enhanced, the doctor can see sufficiently the position of the artery wall to ~~motion~~ move the guide-wire properly and safely. However, if the doctor wants to use a contrast agent, it is appropriate to use diluted contrast agent instead of concentrated contrast agent, which permits [[of]] visualizing the guide-wire tip while the diluted contrast agent is perfusing, which is not possible with concentrated contrast agent. Besides, diluted contrast agent is less toxic for the patient than concentrated contrast agent. Using diluted contrast agent permits to use it [[on]] for a longer [[laps]] period of time without ~~inconvenient~~ inconvenience for the patient, [[thus]] such as a few minutes instead of a dozen of seconds with a concentrated contrast agent. The doctor may operate the start means as often as necessary, until the guide-wire tip is safely passed through the stenosed part of the artery.

On page 10, after the last paragraph ending on line 17, please insert the following new paragraph:

The invention has been described with reference to the preferred embodiments. Modifications and alterations may occur to others upon reading and understanding the preceding detailed description. It is intended that the invention be constructed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.